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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,955	10/30/2003	Ikuya Kikuchi	041465-5211	6270
55694	7590	06/23/2006	EXAMINER	
DRINKER BIDDLE & REATH (DC) 1500 K STREET, N.W. SUITE 1100 WASHINGTON, DC 20005-1209			ALUNKAL, THOMAS D	
			ART UNIT	PAPER NUMBER
			2633	

DATE MAILED: 06/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/695,955	<b>Applicant(s)</b> KIKUCHI ET AL.	
	<b>Examiner</b> Thomas D. Alunkal	<b>Art Unit</b> 2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 October 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/30/03, 1/12/05, 10/21/05.</u> | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

**Claims 3,6-7,10** rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

**Claims 6 and 7** recite the limitation "collimator lens" in **Claim 2**. There is insufficient antecedent basis for this limitation in the claim.

**Claims 3 and 10** are both indefinite on 2 counts. First, applicant does not disclose the initial distance between the two lenses. If the lenses are in contact, then it is not possible to satisfy the relationship of  $0.2 < |f_1/f| < 0.82$ . Secondly, it is indefinite what the meaning of "fulfilled" is. It is unclear whether the relationship of  $0.2 < |f_1/f| < 0.82$  is to be met only initially or maintained throughout the aberration correction process (if one lens is moved, the composite focal length of the system changes accordingly).

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 1-2,4-5,8-9,11-12** rejected under 35 U.S.C. 102(b) as being anticipated by Takahashi (U.S. 6,108,139).

Regarding **Claims 1-2,4-5**, Takahashi teaches a spherical aberration correcting unit for correcting an aberration caused in an optical beam radiated toward an object to be detected and focused on the object, the unit comprising (**Column 2, lines 20-24 and lines 46-50**):

- an aberration corrector composed of a plurality of optical members and configured to form an optical beam into a parallel pencil and to correct aberration caused in the optical beam (**see Column 2, lines 24-33, Column 2, lines 46-50**)
- a driver configured to drive any one of the optical members in an optical axis direction of the optical beam (**see Column 2, lines 29-33**)
- a light receiver configured to receive light reflected from the object to produce a light-reception signal from the received light (**see Figures 1 and 3, Element 17**)
- a controller configured to control the driver based on the produced light-reception signal (**see Column 3, lines 40-45**).
- wherein the object is an optical information recording medium (**see Figure 1, Element 3**)
- wherein the aberration corrector is a collimator lens (**see Column 5, lines 10-13**)

- wherein the any one of the optical members is composed of a plurality of lenses (**see Figure 4, Element 37a**)

Regarding **Claims 8-9,11**, Takahashi teaches:

An optical pickup for reading and writing information from and to an optical information medium by radiating an optical beam toward the optical information medium, the optical beam being focused on the optical information medium, the optical pickup comprising (**Column 2, lines 20-24 and lines 46-50**):

- an spherical aberration correcting unit for correcting an aberration caused in the optical beam, where in the unit comprises: an aberration corrector composed of a plurality of optical members and configured to form the optical beam into a parallel pencil and to correct the aberration caused in the optical beam (**see Column 2, lines 24-33, Column 2, lines 46-50**)
- a driver configured to drive any one of the optical members in an optical axis direction of the optical beam (**see Column 2, lines 29-33**)
- a light receiver configured to receive light reflected from the medium to produce light reflected from the medium to produce a light-reception signal from the received light (**see Figures 1 and 3, Element 17**)
- a controller configured to control the driver based on the produced light-reception signal (**see Column 3, lines 40-45**)
- wherein the object is an optical information recording medium (**see Figure 1, Element 3**)

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- wherein the aberration corrector is a collimator lens (**see Column 5, lines 10-13**)

Regarding **Claim 12**, it is a method of **Claims 1 and 8**, which were previously rejected. See Takahashi's teachings above.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 3 and 10** rejected under 35 U.S.C. 103(a) as being unpatentable over Takashi (**U.S. 6,108,139**) as applied to **Claims 1-2,4-5,8-9,11-12** above, and further in view of Nakagawa (**U.S. 3,887,269**).

See teachings of Takashi above.

Takashi does not teach:

- wherein a relationship of  $0.2 < |f_1/f| < 0.82$  is fulfilled, wherein a composite focal length of the aberration corrector is  $f$  and a focal length of the driven optical member is  $f_1$

However, Nakagawa teaches:

- wherein a relationship of  $0.2 < |f_1/f| < 0.82$  is fulfilled, wherein a composite focal length of the aberration corrector is  $f$  and a focal length of the driven optical member is  $f_1$  (**see Column 1, lines 35-40, 48-68, Column**

**2, lines 1-18).** One of ordinary skill in the art at the time the invention was made could easily discern that dividing Condition 1 (**Column1, line 36**) by  $f$  (composite focal length), the resulting relationship lies within the range specified by **Claims 3 and 10** (see MPEP, 2131.03)

It would have been obvious to one of ordinary skill in the art at the time the invention was to incorporate Nakagawa's teachings into the range of Takahashi's teachings. Both Takahashi and Nakagawa teach lens system focal length limitations that are used to correct spherical aberration. As stated by Nakagawa (**Column 1, 48-68, Column 2, lines 1-18**), this limitation is essential to remarkably improve spherical aberration. Since Takahashi and Nakagawa both disclose inventions that teach methods for correcting spherical aberration, one of ordinary skill in the art at the time the invention was made would have found it prima facie obvious to combine both teachings because the focal length relationship taught by Nakagawa is used in a lens system, which achieves the same function as the invention taught by Takahashi.

**Claim 7** rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi (U.S. 6,108,139) as applied to **Claims 1-2,4-5,8-9,11-12** above, and further in view of Ward et al. (**Published April 1971, "Lens Aberration Correction by Holography"**).

See teachings of Takashi above.

Takashi does not teach:

- wherein a hologram is attached to the collimator lens

However, Ward et al teaches:

- wherein a hologram is attached to the collimator lens (**see Page 1, Introduction**)

It would have been obvious to one of ordinary skill in the art at the time the invention was to incorporate Ward et al.'s teachings into the range of Takahashi's teachings. Both disclose methods for correcting lens aberration. As exemplified by Ward et al., the use holograms to correct aberrations (filtering out phase) has been well known in the art since the early 1970's. Furthermore, one would have been motivated to combine the two teachings because the use of a hologram as an aberration corrector is both cheaper and more practical (**see Introduction**). Thus, it would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made, with a reasonable expectation of success to combine the above teachings of Takahashi and Ward et al., as it pertains to the disclosed invention because Ward et al. teaches exactly wherein a hologram corrects the aberration of a lens with a collimated reference. Therefore, the invention as a whole would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made, absent unexpected results to the contrary.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas D. Alunkal whose telephone number is (571)270-1127. The examiner can normally be reached on M-F 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shanon Foley can be reached on (571)272-0898. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Thomas Alunkal  
Patent Examiner

  
Shanon Foley  
Supervisory Patent Examiner